NATURAL RESOURCES CONSERVATION SERVICE

CONSERVATION PRACTICE STANDARD

PASTURE AND HAY PLANTING

(Acre)

CODE 512

DEFINITION

Establishing native or introduced forage species.

PURPOSES

This practice may be applied as part of a conservation management system to accomplish one or more of the following purposes:

- Establish adapted and compatible species, varieties, or cultivars.
- Improve or maintain livestock nutrition and/or health.
- Extend the length of the grazing season.
- Provide emergency forage production.
- Reduce soil erosion by wind and/or water.

CONDITIONS WHERE PRACTICE APPLIES

This practice may be applied on cropland, hayland, pastureland, and other agricultural lands where forage production is feasible and desired.

CRITERIA

General criteria applicable to all the purposes stated above.

Plant species and their cultivars shall be selected based upon:

- Climatic conditions, such as annual rainfall, seasonal rainfall patterns, growing season length, humidity levels, temperature extremes and the USDA Plant Hardiness Zones.
- Soil condition and position attributes such as pH, available water holding capacity, aspect, drainage class, inherent fertility, salinity and alkalinity, flooding and ponding, and levels of toxic elements that may be present such as selenium and aluminum.
- Plant resistance to disease and insects common to the site or location.
- Plant compatibility with other forage species and their selected cultivar(s) in rate of establishment, maturity, and growth habit when seeded together as a forage mixture.

Specified seeding/plant material rates, methods of planting and date of planting shall be consistent with documented guidance cited by research institutions or agency demonstration trials for achieving satisfactory establishment.

Seeding rates will be calculated on a pure live seed (PLS) basis or percent germination.

Provide a firm, weed-free seedbed that ensures seed will contact soil moisture uniformly, facilitates seedling emergence, and provides a medium that does not restrict or allow roots to become dry.

All seed and planting materials shall be labeled and meet state seed quality law standards.

Legume seed shall be inoculated with the proper, viable rhizobia before planting.

Additional criteria for improving or maintaining livestock nutrition and/or health.

Forage species must be capable of meeting the desired level of nutrition for the kind and class of the livestock to be fed.

Additional criteria for extending the grazing season.

Forage species selected for establishment shall fulfill a recognized dietary deficiency within the year long forage management program.

Criteria for providing emergency forage production.

Select plants that will produce forage for use during periods when other on-farm/ranch forage is unavailable to meet livestock needs.

Criteria for reducing erosion by wind and/or water.

Plants shall have the ability to provide adequate ground cover, canopy cover, root mass, and vegetal retardance to wind forces and water flows either alone or in combination with other forage species when site conditions require erosion protection.

CONSIDERATIONS

Prescribed Burning, Prescribed Grazing, Brush Management, and Grazing Land Mechanical Treatment practices may be used in combination with Pasture and Hay Planting.

Where wildlife management is an objective, the food and cover value of the planting can be enhanced by using an approved habitat evaluation procedure to aid in selecting plant species and providing for other habitat requirements necessary to achieve the objective.

Forage species planted in mixture should exhibit similar palatability to one another to avoid spot or selective grazing.

PLANS AND SPECIFICATIONS

Specifications for the establishment of pasture and hay plantings shall be prepared for each site or management unit according to the Criteria, Considerations, and Operations and Maintenance described in this standard, and shall be recorded on specification sheets, job sheets, in narrative statements in the conservation plan, or other acceptable documentation.

OPERATION AND MAINTENANCE

Growth of seedlings or sprigs shall be monitored for water stress. Water stress may require reducing weeds, early harvest of any companion crops, irrigating when possible, or replanting failed stands, depending on the severity of drought.

Invasion by undesirable plants shall be controlled by cutting, using a selective herbicide, or by grazing management by manipulating livestock stocking rates, density, and duration of stay.

Insects and diseases shall be controlled when an infestation threatens stand survival.

ATTACHMENT 1

New Hampshire Supplemental Specifications

Seedbed Preparation

Seedbed preparation may include one or more of the following operations: Plowing, discing, harrowing, cultipacking, and chemical treatment for conventional seeding; and overgrazing and herbicide application for no till seeding.

In a conventional seeding, keep the number of discings to a minimum to lessen compaction and surface drying of the seedbed surface.

Seeding Dates

Spring seeding should be made as early as the soil condition will allow, but as a rule no later than the end of May.

Fall seeding should be made during the first half of August in Coos, Grafton, and Carroll Counties and no later than August 31 in the remainder of the state.

Lime and Fertilizer

Apply lime in sufficient amounts to achieve a pH level of 6.5+ for alfalfa and 6.0 to 6.5 for other species.

Dolomitic limestone should be considered to provide magnesium for many New Hampshire soils. All applications of less than three tons should be disced into the surface soil rather than plowed down.

For fertilizer, follow the recommendations based on a soil test. In the absence of a soil test, use the following guidelines:

- Apply sufficient phosphorus (150-200 pounds of P_2O_5 per acre) to supply the needs of the stand for at least four years.
- Spring seedings should receive a total of 175-200 pounds of Potassium (K_2O) per acre during the establishment year. Fall seedings should receive at least 100 pounds per acre.
- Where grasses are included in the seeding, apply 40 to 80 pounds of Nitrogen per acre.

Species, Varieties, Seed Mixes, and Seeding Rates **

1. *Well Drained Somewhat Droughty Soils*

(Hay or Greenchop)

12 lbs.	Oneida Alfalfa* and
8 lbs.	Pennlate Orchardgrass

2. *Well Drained Soils*

(Hay, Greenchop, or Pasture)

12 lbs.	Alfalfa* (many variety choices)
6 lbs.	Climax Timothy or
8 lbs.	Pennlate Orchard grass or
8 lbs.	Saratoga Bromegrass

(Hay or Pasture "Bloat Free")

8 lbs.	(Viking or Leo) Birdsfoot Trefoil* and
6 lbs.	Champlain Timothy or
6 lbs.	Saratoga Bromegrass or
6 lbs.	Pennlate Orchardgrass

(Hay, short term)

8 lbs.	Red Clover* and
6 lbs.	(Champlain or Climax) Timothy

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3. *Moderately Well Drained Soils*

(Hay or Pasture)

12 lbs. (Iroquois or Oneida) Alfalfa* and

6 lbs. Climax Timothy or

8 lbs. Saratoga Bromegrass

(Hay or Pasture "Bloat Free")

8 lbs. (Viking or Leo) Birdsfoot Trefoil* and

6 lbs. Champlain Timothy or

6 lbs. Saratoga Bromegrass

(Pasture Only)

2 lbs. Ladino Clover* and

6 lbs. Pennlate Orchardgrass

(Close Grazed Horse or Sheep Pasture)

15 lbs. Kentucky Bluegrass and

1 lbs. White Clover* and

5 lbs. (Empire or Fergus) Birdsfoot Trefoil*

4. *Poorly Drained Soils*

(Hay or Pasture "Bloat Free")

8 lbs. (Viking or Leo) Birdsfoot Trefoil* and

6 lbs. Champlain Timothy

(Pasture)

2 lbs. Ladino Clover* and

6 lbs. Champlain Timothy

(Pasture, often Flooded)

10 lbs. Palaton or Venture Reed Canarygrass

* Inoculate legumes with appropriate rhyzobium inoculant before seeding.

** In poor seedbeds, increase seed rates by 25% or more.

Caution: Do not recommend Alsike Clover in horse hay or horse pasture seedings.

References

New Hampshire Plant Science Guide